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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,546	01/24/2002	Sankar Basu	YOR920020018	8796

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FOREST HILLS, NY 11375

EXAMINER

SMITH, PETER J

ART UNIT	PAPER NUMBER
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2176

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,546

Applicant(s)

BASU ET AL.

Examiner

Peter J Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to communications: amendment filed 4/25/2005.
2. Claims 1-28 are pending in the case. Claims 1, 16, and 22 are independent claims.

Claim Objections

3. Claims 5 and 20 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form. The maximal disambiguation optimization criterion limitation of claims 5 and 20 is a redundant limitation to independent claims 1 and 16.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubler et al. (hereinafter “Stubler”), US 6,804,684 B2 filed 5/7/2001 in view of Toyama, US 6,816,847 B1 filed 9/23/1999.

Regarding independent claim 1, 16, and 22, Stubler teaches actively selecting examples of multimedia content to be annotated by a user and accepting input annotations from the user for the selected examples in fig. 2, fig. 6-7, col. 3 line 46 – col. 4 line 12, col. 8 lines 18-23, and col. 9 line 65 – col. 10 line 18. Stubler teaches propagating the input annotations to other instances of multimedia content and storing the input annotations and the propagated annotations in fig. 2, col. 3 line 46 – col. 4 line 12, and col. 8 lines 18-55.

Stubler does not teach actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result. Toyama does teach actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result in col. 5 lines 15-46.

Stubler teaches in col. 2 line 59 – col. 3 line 10 that it is directed towards propagating annotations from stored images to similar images that have not yet been annotated. Toyama teaches in col. 1 line 47 – col. 2 line 14 that it is directed towards propagating annotations from a known training set to similar images that have do not have any associated annotations. Thus, the

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field of endeavor is very similar for Stubler and Toyama. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Stubler and Toyama to have created the claimed invention. It would have been obvious and desirable to have used the active selection techniques disclosed by Toyama in col. 5 lines 15-46 to have improved the active selection of images to be annotated as taught by Stubler so that a maximal disambiguation result could have been achieved as is the reason for a Toyama selection of a wide variety of images in col. 5 lines 30-32 and a wide variety of annotations for the images in col. 5 lines 32-46.

Regarding dependent claims 2 and 17, Stubler teaches wherein the step of actively selecting is performed using a selection technique from the group consisting of deterministic and probabilistic in col. 4 line 64 – col. 5 line 19.

Regarding dependent claims 3 and 18, Stubler teaches wherein the step of actively selecting which is performed deterministically or probabilistically, is based on explicit models and feature proximity/similarity measures, and returns one or more examples of multimedia content to be annotated in fig. 2 and col. 8 lines 18-55.

Regarding dependent claims 4 and 19, Stubler teaches wherein the step of actively selecting, which is performed deterministically or probabilistically, is based on implicit models and feature proximity/similarity measures, and returns one or more examples of multimedia content to be annotated in fig. 2 and col. 8 lines 18-55.

Regarding dependent claims 5 and 20, Stubler teaches wherein an optimization criterion for active selection includes one or more criteria selected from the group consisting of: information measures, and confidence in fig. 2 and col. 8 lines 18-55.

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Regarding dependent claims 6 and 21, Stubler teaches wherein the multimedia content comprises one or more types selected from the group consisting of: images, audio, video, graphics, text, multimedia, Web pages, time series data, surveillance data, sensor data, relational data, and XML data in col. 3 line 46 – col. 4 line 12.

Regarding dependent claim 7, Stubler teaches wherein the input annotations are created by a user with reference to a vocabulary in col. 3 line 46 – col. 4 line 12 and col. 8 lines 18-23.

Regarding dependent claim 8, Stubler teaches wherein the vocabulary contains one or more items selected from the group consisting of: terms, concepts, labels, and annotations in col. 3 line 46 – col. 4 line 12 and col. 8 lines 18-23.

Regarding dependent claim 9, Stubler teaches wherein the process of creating input annotations by the user involves multimodal interaction with the user using graphical, textual, and/or speech interface in fig. 2 and col. 3 line 46 – col. 4 line 12.

Regarding dependent claim 10, Stubler teaches wherein the input annotations are created by means of steps selected from the group consisting of: creating new annotations, deleting existing annotations, rejects proposed annotations, and modifying annotations in fig. 6-7 and col. 9 line 65 – col. 10 line 18.

Regarding dependent claim 11, Stubler teaches wherein the vocabulary is adaptively or dynamically organized and/or limited by the system of the user in fig. 6-7 and col. 9 line 65 – col. 10 line 18.

Regarding dependent claim 12, Stubler teaches wherein the multimodal interaction involves speech recognition, gaze detection, finger pointing, expression detection, and/or

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effective computing methods for sensing a user's state in fig. 6-7 and col. 9 line 65 – col. 10 line 18.

Regarding dependent claim 13, Stubler teaches wherein the determination of the propagation of annotations is made deterministically or probabilistically and on the use of models for each annotation or for joint annotations in col. 4 line 64 – col. 5 line 19.

Regarding dependent claim 14, Stubler teaches wherein the models are created or learned automatically or semi-automatically and/or are updated adaptively from interaction with the user in fig. 2, col. 3 line 46 – col. 4 line 12, and col. 8 lines 18-55.

Regarding dependent claim 15, Stubler teaches wherein the models are based on nearest neighbor voting or variants, parametric or statistical models, expert systems, rule-based systems, or hybrid techniques in fig. 2, col. 3 line 46 – col. 4 line 12, and col. 8 lines 18-55.

Regarding dependent claims 23, 25, and 27, Stubler does not teach wherein that at least one criterion includes an ambiguity level of the selected examples. Toyama does teach wherein that at least one criterion includes an ambiguity level of the selected examples in col. 5 lines 15 – col. 6 line 50. Stubler teaches in col. 2 line 59 – col. 3 line 10 that it is directed towards propagating annotations from stored images to similar images that have not yet been annotated. Toyama teaches in col. 1 line 47 – col. 2 line 14 that it is directed towards propagating annotations from a known training set to similar images that have do not have any associated annotations. Thus, the field of endeavor is very similar for Stubler and Toyama. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Stubler and Toyama to have created the claimed invention. It would have been obvious and desirable to have used the active selection techniques disclosed by

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Toyama in col. 5 lines 15-46 to have improved the active selection of images to be annotated as taught by Stubler so that a maximal disambiguation result could have been achieved as is the reason for a Toyama selection of a wide variety of images in col. 5 lines 30-32 and a wide variety of annotations for the images in col. 5 lines 32-46.

Regarding dependent claims 24, 26, and 28, Stubler does not teach wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space. Toyama discloses the use of support vector machines in col. 6 lines 10-50. Toyama discloses wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space in col. 5 lines 15 – col. 6 line 50.

Stubler teaches in col. 2 line 59 – col. 3 line 10 that it is directed towards propagating annotations from stored images to similar images that have not yet been annotated. Toyama teaches in col. 1 line 47 – col. 2 line 14 that it is directed towards propagating annotations from a known training set to similar images that have do not have any associated annotations. Thus, the field of endeavor is very similar for Stubler and Toyama. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Stubler and Toyama to have created the claimed invention. It would have been obvious and desirable to have used the active selection techniques disclosed by Toyama in col. 5 lines 15-46 to have improved the active selection of images to be annotated as taught by Stubler so that a maximal disambiguation result could have been achieved as is the reason for a Toyama selection

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of a wide variety of images in col. 5 lines 30-32 and a wide variety of annotations for the images in col. 5 lines 32-46.

Response to Arguments

6. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment to independent claim 1 and 16 significantly changed the scope of the claimed invention when interpreted as a whole. The Examiner notes the similarity of the added limitation to that of dependent claims 5 and 20. However, a change in the scope occurs, as the claimed "maximal disambiguation" is now recited as a requirement within claims 1 and 16 as opposed to being offered as a choice within (Markush type) claims 5 and 20. The Examiner has searched and found the prior art reference of Toyama which teaches actively selecting examples of multimedia content, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result. Toyama also teaches use of a support vector machine for determining ambiguity. The Examiner believes the combination of teachings of Stubler et al. and Toyama render the claimed invention obvious.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. K. Goh, E. Chang, and K. Cheng, "Support vector machine pairwise classifiers with error reduction for image classification", Proceedings of the 2001 ACM workshops on Multimedia, September 2001, pages 32-37 teaches applying support vector machines to image classification. Platt, US 6,327,581 B1 filed 4/6/1998 discloses building a support vector machine

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classifier. Gibbon et al., US 6,714,909 B1 filed 11/21/2000 discloses automated multimedia content indexing and retrieval. Bradshaw, US 2002/0122596 A1 filed 1/2/2001 discloses a hierarchical, probabilistic, localized, semantic image classifier. Liu et al., US 2005/0114325 A1 continuation of application filed 10/30/2000 discloses semi-automatic annotation of multimedia objects. Luo et al., US 2002/0131641 A1 provisional filed 1/24/2001 discloses determining image similarity.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Smith whose telephone number is 571-272-4101. The examiner can normally be reached on Mondays-Fridays 7:00am-3:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather R Herndon can be reached on 571-272-4136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJS
6/28/2005

William L. Bashore
WILLIAM BASHORE
PRIMARY EXAMINER
7/6/2005